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ABSTRACT

A user attitude survey was conducted in the main library at the University of Oklahoma before and after the opening of a new library wing which effectively doubled the size of the main library. At the time of the opening of the new wing, the circulation department began using a new computer system for circulation of the general collection. The survey included questions concerning the new circulation services, the new building facilities, and the collection arrangement, and was administered in the last month of the spring semester before the new wing was opened and in the last month of the following fall semester. Approximately 250 questionnaires were distributed each time. A return rate of 90% was achieved the first semester and 67% the second semester. Although changes in the facilities and services were dramatic, general user satisfaction did not appear to be affected. However, changes in users' opinions about some specific services were noted. High user expectations, a nonspecific survey construction, and multiple-service changes are discussed as some of the possible reasons for a lack of detectable change in overall satisfaction. The library survey and a 12-item bibliography are included. (Author/THC)

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Changes in Facilities and Services and Their Effect on User
Attitudes

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ABSTRACT

A user attitude survey was conducted in the main library at the University of Oklahoma pre- and post- the opening of a new wing. The survey included questions concerning new circulation services, as well as queries about the new building facilities and collection arrangement. Although changes in the facilities and services were dramatic, general user satisfaction did not appear to be affected. However, changes in users' opinions about some specific services were noted. High user expectations, nonspecific survey construction, and multiple-service changes are discussed as some of the possible reasons for a lack of detectable change in overall satisfaction.

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User frustration or user satisfaction has been the subject of a number of studies by librarians in recent years. A common performance measure has been to determine patron frustration by measuring the retrieval success, or, book availability (Kantor, 1976; Saracevic, et al, 1977; Rinkel & McCandless, 1983). Attitude surveys have also been completed in an attempt to determine the quality of service. Moss, for example, surveyed the attitude of student library users and found students most concerned about study space and book stock adequacy (Moss & Green, 1980). Frohberg has perhaps solved the quandary of which methodology is best by combining the two. It is noteworthy that in so doing, Frohberg has been able to demonstrate that an objectively measured change in availability, under the circumstances described, was accompanied by a change in user attitude (Frohberg & Moffett, 1981). Line, however, found little measurable change in attitude due to changes in services provided (Line & Tidmarsh, 1966).

More recently, D'Elia concluded that user behavior is enigmatic and maybe too complex to gauge library performance except for analysis of specific services (D'Elia & Walsh 1983). Chwe (1978) suggests a model which solves that problem by having the patron rate the importance of the service to them in addition to determining their opinion of the quality of the service.

Although not consistently demonstrated in attitude surveys to date, it seems logical to presume that dramatic changes in services and facilities should measurably affect patron's perceptions about the library. Attitudes are complex and the relationship between changes in facilities and changes in such perceptions may not be consistent. Orr (1973) proposes that the "goodness of library service" can be shown by increased utilization of a service, since utilization tends to increase as capability does. He does caution that this relationship may not be directly proportional. From this and Frohberg's results, one might conclude that a change in attitude may accompany a change in use.

Regardless of the difficulty inherent in determining patron perceptions, continued research in this area is important to providing desirable services. Attitude surveys are just one of many marketing techniques that might prove useful to libraries interested in determining what services are desired and then "selling" them to their clientele.

In the summer of 1982, the University of Oklahoma Libraries completed and opened a new wing which effectively doubled the size of the main library and rerouted flow to and within the building. At the same time, the circulation department began circulation of the general collection on a new computer system, DataPhase ALIS II. These changes significantly altered the environment and service desk interactions most patrons encountered. In an attempt to measure

the change in attitude which these new facilities and services extolled from users, a survey was conducted.

The results of the survey suggest an instrument for user satisfaction the key elements of which are: rating the importance of a service to the user, as well as assessing their opinion about service quality, inquiring about specific services or facilities, gauging user expectations for improvement, and averaging both positive and negative reactions to provide an overall measure of satisfaction. Methods for incorporating all these concepts into a survey form are discussed.

METHODOLOGY

Frohberg's study on the impact of computerization of circulation procedures served, in part, as a basic reference for the construction of the attitude survey (see figure 1) distributed to users by circulation desk personnel. (insert figure 1) The survey was administered in the last month of the spring semester before the new wing was opened and in the last month of the following fall semester. The last month of each semester was chosen to insure that the type of use and degree of business was similar in each situation.

Approximately 250 questionnaires were distributed each time. In the first distribution, users were handed the

questionnaire as they exited and most stopped to fill it in as their materials were charged, which accounts for the high return rate of 90 percent. The following semester patrons were again surveyed upon leaving the facilities, but the desk orientation was altered, and many simply exited before completing the form. Therefore, only 167 surveys were returned, for a response rate of 67 percent.

It is important to note that those surveyed, for whatever reasons, were library users. As in some surveys, they were not part of the potential user population, but a sampling of the actual user population. Therefore, they presumably had an opinion of the library based on their use of it - not from hearsay. Also, the two survey samples are different. No effort was made to find the same patrons and compare their particular change in attitude.

Once the surveys were administered, SAS statistical package was used to compute Chi-square statistics in two-way tables, which provided the obtained frequency, expected frequency and Chi-square values for each response possible comparing pre-new building answers with post-new building answers. The Chi-square values for each question in the survey are contained in Table I. (Insert Table I)

Question number ten asked the patron how difficult the library's floor arrangement was to understand and is a good example to review initially. The floor arrangement was considerably altered during the move. In Table II, a contin-

gency table for question number ten, the total responses for each column (possible answer) are totaled. (insert Table II) An examination of the post-move survey results shows a higher than expected response frequency for answer number one. It appears then, that the change in arrangement brought about during the move did apparently affect those surveyed. The overall probability and total chi-square for that question are listed in Table I. Since the probability is .0051, and our determination of significance for the purposes of this analysis will be concluded at .05, then it follows that the total difference for all possible choices in question ten pre vs. post-move is significant. A close examination of all the cells in Table II reveals the greatest changes appear in the 'easy to understand' and 'hard to understand' columns. It appears therefore, that the general population of library users' opinions about the library arrangement have improved considerably. The first group of respondents most often found the collection arrangement "hard to understand" while the second group's opinion most frequently fell into the "easy to understand" category - a shift of response that jumped over the "understandable" category.

Question five represents the most dramatic change indicated. This is not surprising, since it addresses seating capacity. This coincides with Moss's findings that study space is an important concern to students (Moss & Green, 1980). The other question which addresses study space

availability is question number eight, which shows a small but significant improvement.

In question four, patrons were found to be significantly more delayed in circulation desk service. This finding actually confirms Frohberg's results. Frohberg demonstrated that upon implementation of a new circulation system, frustration increases due to the large amount of materials which must be loaded into the system at the time of check-out (Frohberg & Moffett, 1981 p. 86). Although this survey did not follow-up attitudes about circulation desk interactions later on, the fact that it initially supports Frohberg's findings leaves us with the opinion that satisfaction again rose as the number of books coded rose, mimicing Frohberg's situation. An examination of use statistics bears out this assumption. Circulation decreased about 10% the first year the new system was in operation and have since risen 12%. Again, Frohberg's findings of an increase in in-house use are confirmed as in-house use of materials post-new circulation system in this situation was up 33%. What is noteworthy here is that the increase in in-house use was initially attributed to the new building facilities. However, in light of Frohberg's findings, it appears that it may be related to the implementation of the computer system, at least in part.

The remaining questions demonstrated no significant change in opinion. It is interesting to note that there are

three categories covered: frequency of use (questions 2 & 9), perceived availability (questions 3 & 7), and overall satisfaction (questions 11 & 12). In review, no real change was made in availability, and following Frohberg's assertion that a change in state is reflected in a change in attitude, no change should be the result. However, Frohberg did point out that availability did change in their study due to decreased discharge time and increased stack maintenance (Frohberg & Moffett, 1981 p. 71). Informally, it appears that the same effect has been noted at University Libraries, but that improvement was not felt until the old manual system had been completely cleared of charges, which took from six months to one year to complete. Therefore, availability was not improved until after this survey was administered.

Frequency of use and overall satisfaction are perhaps the most curious in their lack of significant change. Apparently, users did not stay any longer in the facility than they had previous to the new addition. There was a five percent increase in the number of people entering the building. As stated earlier, the in-house use of materials increased thirty-three percent during the same time period. This points to a dramatic change in what users did during their time in the building. Specifically, users were much more involved in using library materials, not just studying or socializing. It must be that patrons found the collection

easier to use, a conclusion supported by the results of question 10. Hence, it appears that a change in the ease of use stimulates a change in the actual use of materials, but has no measurable effects, under the conditions of this study, in the frequency of library visitation. Since there was a five percent increase in the number of patrons coming to the facility, we choose to interpret some of the elevation of materials' use to "new patrons".

DISCUSSION

Some possible explanations for the lack of change in overall satisfaction should be forwarded at this point. In addition, we will look at ways our survey form could have been improved to provide a better measure of satisfaction. There are several possible ways to explain the lack of change in satisfaction. They are:

- 1) A change in facilities and/or services has no effect on the overall satisfaction level.
- 2) A change in satisfaction may only be detected if the attitude relates to a specific service that is specifically queried.
- 3) Changes may not necessarily be considered improvements or degradations to service thereby contributing no change to the overall level of satisfaction.

4) Many patrons may not avail themselves of specific services and therefore may not be affected by a change in those services.

5) When many services or facilities are changed both improved and reduced service may be perceived. As a result, the overall satisfaction may appear unchanged due to the moderating effect both positive and negative changes may have on general attitude.

6) Unrealistic expectations for new services and facilities may make improvements appear less significant, thereby revealing no change in overall satisfaction.

7) The survey instrument used was not a valid measure of satisfaction or sample design was inadequate.

8) The change in facilities and services required the patron to learn new things, thereby stimulating a resistance to the change which could affect attitude.

9) Judgements about the wisdom of appropriate resource allocation in the university community might negatively predispose some users to new facilities.

Based on the research reviewed earlier, is there sufficient empirical evidence to conclude that possibility number one can be disregarded? The evidence is somewhat contradictory. D'Elia suggests that user opinion maybe too complex

to measure accurately. Frohberg states that quantitative changes are accompanied by changes in attitudes. The answer is probably somewhere in-between and relates to the second explanation - that attitude or opinion about specifics are the only measurable results. This is somewhat confirmed by our inability to formulate a multivariate model to predict outcome. This was attempted using discriminate analysis, factor analysis, and dummy regression (Barker & Barker, 1984). We may not have measured enough variables, which suggests increased complexity. It may be though, that the kind of interaction between user's opinions about various services could not be adequately weighted by this instrument. That problem can be solved by Chwe's rating of the importance of a service at the same time the user rates the quality of the service.

The definite change found in perceptions of available study space lends credence to this explanation and underscores the need for specific measures. Not only did question 5 address a specific service, but it was a service that had been demonstrated in past attitude survey's to be of interest to students (a major proportion of the users surveyed). The explanation of the results has implications for the construction of future questionnaires. If only those changes that are of special interests to users are affected, then even dramatic changes in facilities may not necessarily result in any change in user perceptions. In this case, a

substantial increase in book storage space may be of significant interest to library staff, but may not be to library users.

An example of the type of survey question which weights and quantifies opinion as suggested by Chve could be:

1) On a scale of 1 to 10 (1=poor and 10=superior) rate your feelings about the speed of service at the circulation desk.

2) Generally, how often do you inquire at the circulation desk to check out a book, find out if something you are looking for is checked out, etc. a) once a day b) once a week c) once a month b) once every two months d) once a semester e) once a year

Addressing such questions to a specific service can show improvement or deterioration in quality (when comparing before and after surveys).

Points 3, 4 and 5 are also covered by this kind of questioning. If a patron only uses a service once a year, their rating of its quality takes on less importance and a formula can be devised which quantitatively underscores the effect this particular service has on a "general satisfaction level" (see Chve for formula suggestion). Such priority ratings can then be compiled to produce a model that takes into account the moderating effect of positive or negative changes of several different services - each of varying value to the patron.

Another explanation for the lack of change in overall satisfaction relates to the potential change in expectations that a new facility may generate, point 6. A new facility's simultaneous occurrence with other service changes probably increases patron's expectations disproportionately. These high expectations may make it difficult to impress the patron with improved services. They may simply remain satisfied, or may even feel disappointment, if their expectations were unrealized. A poll taken as users entered the library could provide a measure of expectations and this information could be correlated with the exit attitude survey. It would probably be advisable to include a question about the success of that particular visit and compare this also with the expectations.

Any of these points could account for the lack of significant change in general satisfaction. The survey instrument, though, lacks the measure of a service's importance to the patron, which would help to identify which service changes had the most influence. This, however, does not invalidate the survey form, as point 7 suggests. There is some support for validity in the fact that it confirms Frohberg's findings about circulation service and Moss's assertions about study space. Also, the results obtained agree with D'Elia's findings which showed no change in satisfaction, forcing him to conclude that attitudes might be too complex to reliably generalize.

The effect of resistance to the change forced on the user by new facilities is a difficult phenomena to weigh in importance. Innovation theory (Rogers, 1983 p. 244) points out that adoption of an innovation or learning of a new skill follows a normal curve. As a result, the easiest way to allow for resistance, may be to delay the second sampling until peer networks communicate the value or lack of value inherent in the new facility. Then, the attitude sampled should no longer be clouded by feelings of resistance.

Finally, in any community where limited resources cause competition for dollars, some resentment results from the funding of most projects. A delay in the second sampling could also allow time for these feelings to defuse.

Although the thoughts above indicate there are many ways this survey could be improved, it should not be forgotten that the results do have significance to management for two reasons:

- 1) They demonstrate that the change in facilities and services showed no detrimental effect on overall satisfaction.
- 2) When compared to circulation services slowdown, the static satisfaction revealed that patrons were apparently willing to endure the slowdown with some equanimity.

These are applicable results which affirm that no disastrous or negative results came from the changes and that patrons' good opinions will bear up under some temporarily burdensome alterations in service.

Conclusion

Determining user satisfaction with library services in general should be formulated from data about specific services. Feelings for specific services should be placed in priority order based on the user's dependence on the service in their library visits. An average of the weighted services, it is suggested, will provide a measure of satisfaction which can be compared to general responses to overall satisfaction. This is a summary of a model suggested by this survey and the research of others. In addition, measuring change in attitude should include some measure of expectations to allow for their effect on user opinion, and might also be delayed in the second sampling to reduce feelings of resistance, etc.

The survey in this study did not test this model theory, but rather provided the evidence necessary to reinforce the suggestions of Chwe, D'Elia, and Frohberg. It was the lack of measurable change in overall satisfaction that forced a reappraisal of the instrument and the contributing factors

in a complete model to assess satisfaction. Despite the difficulties, pursuit of overall satisfaction continues to be necessary part of any instrument measuring satisfaction. It provides the user an opportunity to comment if a particular service/facility is not included in other parts of the instrument, and it is a check for negative attitude changes that may not be evident in separate questions about individual services.

In light of current marketing strategies for libraries, it seems most appropriate to survey users and determine their needs and interests in both services and facilities. According to Daniel Carroll (1982),

Marketing also seeks to identify would-be users whose utilization patterns are underdeveloped, for whatever reasons, and again to construct service arrangements that can relieve what has been reduced or nonexistent usage.

If Carroll is right, results from such surveys could assist managers in determining what services/facilities would most improve use. Also, considering the costs of circulating materials and competition with home subscription of online services, strong arguments can be forwarded to support facilities or services which encourage in-house use and user comfort.

The final problem lies in correctly identifying user desires and weighing them against possible solutions. The use of an attitude survey in this circumstance has reinforced the findings of others and points to some specific concerns

patrons deem important. The value of attitude surveys will really only be completely demonstrated when more have been administered and contributing factors can be isolated and rated; thereby completing a weighted picture of which services or facilities most affect user opinion.

Any effective overall performance measure should include a qualitative component. The model suggested here might fill that role and help determine if quantitative service changes actually result in measurable changes in patron perceptions.

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LIBRARY SURVEY

1. Please circle your status. Freshman Sophomore Junior Senior
 Grad Faculty Other
2. How often do you generally use the Main Library? (check one)

More than once a week	_____
Once a week	_____
Once a month	_____
Once a semester	_____
Almost never	_____
3. The last time you looked for a book in the Main Library, were you able to locate it? _____yes _____no
4. How often have you been frustrated by delays in service when checking out library materials? (circle one)

1) Seldom or never	2) Occasionally	3) Often	4) Very frequently
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5. In your opinion, is there adequate seating space in the library?

_____yes	_____no
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6. Have you ever placed a hold on a book that was checked out by another patron?

_____yes	_____no
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7. If you were to rate your chances of finding the books you need when you come to the library, what would they be?
8. Almost never Half the time Almost always

0	10	20	30	40	50	60	70	80	90	100
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8. When you usually come to the library, how often are you able to find a quiet place to study? (excluding construction noises)

1) Seldom or never	2) Occasionally	3) Often	4) Very frequently
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9. About how many hours were you physically present in the Main Library during the past three days? _____
10. When you are looking for books, is the floor by floor arrangement of the collection:

1) Easy to understand	3) Difficult to understand
2) Understandable	4) Impossible to understand
11. To what extent are you satisfied with library services?

1) Very satisfied	3) Sometimes satisfied
2) Usually satisfied	4) Seldom or never satisfied
12. In your opinion, how do most other students feel about library services?

1) Very satisfied	3) Sometimes satisfied
2) Usually satisfied	4) Seldom or never satisfied

(Questions 3, 4, 7, 9, 11, and 12 are taken or adapted with permission from a copyright instrument designed by Tantalus, Inc. for the Oberlin College Libraries)

TABLE I

CHI-SQUARE & PROBABILITIES OF SURVEY QUESTIONS

Question	Chi-square	Degrees of Freedom	Significance
2 (Use)	6.591	4	n. s.
3 (Locating Lost Book)	3.082	1	n. s.
4 (Frustration)	10.672	3	.01
5 (Seating)	39.317	1	.0001
6 (Holds)	2.893	1	n. s.
7 (Finding Books)	11.467	11	n. s.
8 (Quiet Place)	8.224	3	.04
9 (Hours Present)	21.070	13	n. s.
10 (Arrangement)	12.452	3	.006
11 (Own Satisfaction)	2.647	3	n. s.
12 (Other Satisfaction)	.408	3	n. s.

TABLE II
QUESTION TEN CONTINGENCY TABLE

Frequencies	Easy to understand	Understand- able	Hard to understand	Impossible to understand
Pre-Move Freq	49	94	70	10
Expected Freq	62.0	91.3	58.0	9.8
Post-Move Freq	59	65	31	7
Expected Freq	46.0	67.7	43.0	7.7

Chi-square = 12.452, 3 degrees of freedom
probability = .006